

**SCIENTIFIC AND PROFESSIONAL ACTIVITY OF RENAISSANCE
PERIOD SCIENTISTS (IN THE EXAMPLE OF ABU ALI IBN SINO)**

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Abstract: One of the great thinkers who brought the culture of the peoples of Central Asia to the forefront of world culture in the Middle Ages is Abu Ali ibn Sina, who is known in Europe as Avicenna. Ibn Sina (real name Husain, father's name Abdullah) was born in Afshana village of Bukhara, in Safar month of 370 (980) AH, in a wealthy family. In 986, Ibn Sina's family moved to Bukhara, and from that time, young Husain began to receive basic education and study science. His youth and youth correspond to the last years of the Samanid rule, in particular, the reign of Nuh II ibn Mansur Samani (976-997).

Keywords: renaissance, scientific activity, Central Asia, Middle East, professional activity

Since Ibn Sina was talented, had a strong memory, and had a sharp mind, he quickly began to master the sciences known in his time. At the age of 10, he memorized the Qur'an. From the age of 13, he started studying elementary mathematics, logic, jurisprudence, and philosophy. Despite his young age, Ibn Sina studied philosophy under the guidance of Abu Abdullah Natili, medicine from Hasan ibn Nuh al-Qumri, and gradually practiced medicine. Along with the deep study of the works of Eastern thinkers who passed before him, he diligently studied the ancient Greek natural-scientific and philosophical heritage, especially the works of Aristotle, Euclid, Ptolemy, Galen, Hippocrates, Pythagoras, and

Porphyry. Even at the age of 16-17, Ibn Sina became known as a famous doctor and judge. After the conquest of Bukhara by Karakhanids in 999, the power of Somanids was in crisis. In 1000, ibn Sina left Bukhara and went to Khorezm, considered one of the centers of culture, where he was admitted to the academy of his time, which united scholars from the court of Ali ibn Ma'mun, governor of Khorezm. Ibn Sina became closely acquainted with mature scholars such as Beruni, Ibn Miskawayh, Abu Sahl Mashihi, Abu Khair Hammar, Abu Nasr Ibn Iraq. But during this period Mahmud was forced to flee from the persecution of Ghaznavi, leaving Khorezm and wandering in different cities of Khurasan and Iran. Ibn Sina, who came to the city of Jurjan through the cities of Abivard, Tue, and Nishapur, lived as a famous physician in the palace of governor Qabus ibn Vashmgir, and met his future student Juzhoni. In 1019-21, while serving as a minister in Hamadan, he could not agree with the governor and spent 4 months in prison. In 1023, he fled to Isfahan and devoted his whole life to writing scientific works. Ibn Sina's famous works such as "Kitab al-qanun fit-tibb", "Kitab un-najat", "Kitab ul-insaf", treatises on geometry, astronomy, flora, fauna, logic, the last philosophical story "Hayy ibn Yaqzan" written in He was busy building an observatory in Isfahan. In the last years of his life, due to the intensification of feudal wars and his active participation in social and political life, he wandered between the cities of Isfahan, Ray, and Hamadan, and died of tuberculosis on June 18, 1037 in Isfahan at the age of 57.

Ibn Sina's life path is known from the biography written by him and from the sources left by his student Juzhoni. Ancient Eastern culture, Greek science, philosophy, and the struggles of Central Asian peoples for independence played an important role in the formation of Ibn Sina's scientific interests and worldview. In his biography, Ibn Sina notes that he diligently studied Farabi's important treatises such as "Aims of Metaphysics" and "Fusus ul-hikam" and used them

extensively.

The total number of Ibn Sina's works exceeds 450, but only about 160 of his works have reached us. Many of his treatises were lost due to moving from city to city, feudal wars, palace riots, and various disasters. In many sources Ibn Sina is interpreted primarily as a physician, while medicine is one of the most important of his scientific fields. Most of Ibn Sina's works were written in Arabic, which was the scientific language of the Near and Middle East at that time, and some were written in Persian. His big work known to us "Kitab ush-shifo" ("Book of Healing") consists of 22 volumes, 4 of which are divided into logic, physics, mathematics, and metaphysics. Some of its parts have been translated into Latin, other European languages, Eastern languages, as well as Russian and Uzbek languages. The 20-volume Kitab ul-Insaf (The Book of Justice) has not reached us because it was lost in a fire in Isfahan. "Kitab un-najat" ("Book of Salvation") consists of 4 large parts - logic, physics, mathematics, metaphysics, "Kitab lisan ul-arab" ("Book of Arabic language") contains 10 volumes. "Donishnoma" is written in Persian and includes 4 parts - logic, physics, mathematics, metaphysics (translated into Russian, part printed in Uzbek).

Ibn Sina's works were translated into Latin, which was considered a scientific language in Europe in the Middle Ages, and through it into other European languages. In addition to scientific treatises, Ibn Sina created philosophical stories such as "The story of Tayr", "Solomon and Ibsol", "Hayy ibn Yaqzan" which express deep philosophical content through artistic images and certain events.

Ibn Sina was also a mature poet of his time. He is one of the founders of the rubai genre in Eastern, especially Persian poetry, and his rubai express deep philosophical conclusions. Ibn Sina also wrote verses in Arabic (part of his poetic heritage was published in Russian and Uzbek languages). Ibn Sina created a

medical work called "Urjuza", which explains medical issues in verse. His correspondence with Abu Rayhan Beruni and with his student, the Azerbaijani thinker Bakhmanyar, about the teachings of Aristotle (Arastu) are famous in the world of science. Especially medicine, related sciences such as anatomy, psychology, pharmacology, therapy, surgery, diagnostics, hygiene, were enriched with several new inventions in Ibn Sina's work and rose to a new level. In addition to these, he was able to advance new ideas in the field of studying chemistry, mineralogy, astronomy, mathematics, flora, and geological processes. Ibn Sina's works in the field of medicine include Kitab al-qanun fit-tibb (Laws of Medicine), Kitab ul-Qulanj (Intestinal colic), Kitab un-nabz (Book on angiography), Fuj ul-tibbiya joria fi majlisih ("Wise words about medicine"), "Tadbir ul-manzil" ("The structure of the residence"), "Fil-hindubo" ("About the Sachratqi plant"), "Risola fi-dastur it There are works such as "Medical" ("On Medical Instructions"). His encyclopedic work on medicine "Kitab al-qanun fit-tibb" consists of 5 independent large works: each of them covers a certain area in a consistent and comprehensive way.

Ibn Sina's worldview was formed under the influence of Farabi's works, he continued Farabi's views on socio-philosophical issues, enriched and systematized the advanced philosophical stream with new natural-scientific ideas and raised it to a new level. According to Ibn Sina, the task of philosophy is based on the principles of necessity, possibility, reality, and causality to comprehensively investigate the existence of all existing things, their origin, order, interaction, transition from one to another. Universe - all existing things are divided into two: necessary existence (wujudi wajib) and possible existence (wujudi can). Necessary being forms a whole independent of anything, he is the most willful, powerful, wise God. all other things exist potentially and come from the necessary being, God. The body is obligatory and the body is possible - in the

relationship of cause and effect. This process takes place gradually in the form of emanation, that is, in the form of light coming from the sun. In this order, the mind, soul (nafs) and body, existing in the form of possibility, in connection with them, the celestial spheres arise, become existing things. These are all substances. In addition, there are accidents (images) in existence - signs, color, size, smell and other sensations of things. Body consists of form and matter. God is eternal, and matter, which is his consequence, is also eternal. It itself is the basis of other concrete bodies. Concrete appearances and forms of things change, but their material basis does not disappear. Matter always exists before things that can come into existence, and these things need matter to form them. The simplest, indivisible form of matter consists of four elements: air, fire, water, earth. As a result of their various interactions, complex material objects are formed. Complex things can change and take on different forms, but the four elements that are their material basis do not disappear, they are preserved forever. According to him, first the mountains and rocks, then plants, animals and man came into existence as the end of development.

Ibn Sina argues that true moral qualities and an ideal community can be achieved in this existing world, and people should live in a society based on mutual support. It insists that society should be governed by just laws adopted by mutual consent of the people. All members of the society should obey this law, breaking the law and injustice should be punished, provided that if the king himself allows injustice, the people's revolt against him should be correct and supported by the society.

Ibn Sina played a major role in the development of world culture with his multifaceted productive work and rich heritage. Ibn Sina was able to embody the spiritual achievements of the high cultural elation and cultural "awakening" in the countries of Central Asia, the Near and Middle East in his creativity and scientific

activity, thereby greatly influencing the development of enlightenment and culture in the whole East and Europe.

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